BEFORE

THE PUBLIC SERVICE COMMISSION OF

SOUTH CAROLINA

DOCKET NO. 2021-3-E - ORDER NO. ______

SEPTEMBER __, 2021

IN RE:	Annual Review of Base Rates for Fuel Costs of Duke Energy Carolinas, LLC	**PROPOSED ORDER APPROVING AND ADOPTING ADJUSTMENT IN FUEL COST RECOVERY FACTORS**

This matter comes before the Public Service Commission of South Carolina ("Commission") on the annual review of base rates for fuel costs of Duke Energy Carolinas, LLC ("DEC" or "Company"). The procedure followed by the Commission is set forth in S.C. Code Ann. § 58-27-865, which provides for annual hearings to allow the Commission and all interested parties to review the prudence of the fuel purchasing practices and policies of an electrical utility and for the Commission to determine if any adjustment in a utility's fuel cost recovery mechanism is necessary and reasonable. Additionally, pursuant to S.C. Code Ann. § 58-39-140, the Commission must determine whether to increase or decrease the fuel cost component designed to recover the incremental or avoided costs incurred by the Company to implement the Distributed Energy Resource Program ("DERP") previously approved by the Commission.

I. PROCEDURAL HISTORY

By letter dated March 22, 2021, the Clerk's Office of the Commission instructed the Company to publish a Notice of Hearing and Pre-file Testimony Deadlines ("Notice") in newspapers of general circulation by May 21, 2021, and to provide Proof of Publication by June 15, 2021. The letter also instructed the Company to furnish the Notice to each affected customer on or before May 21, 2021 and provide a certification to the Commission that the Notice had been furnished by June 15, 2021. The Notice indicated the nature of the proceeding and advised all interested parties of how to participate in this proceeding and of important deadlines. On June 15, 2021, the Company filed with the Commission an affidavit of publication of the Notice and filed affidavits that the Notice had been timely furnished to all customers.

The Commission received petitions to intervene from the South Carolina Coastal Conservation League ("CCL"), the Southern Alliance for Clean Energy ("SACE"), and the South Carolina Energy Users Committee ("SCEUC"), which were granted.[1] The South Carolina Office of Regulatory Staff ("ORS") is automatically a party pursuant to S.C. Code Ann. § 58-4-10(B).

II. JURISDICTION OF THE COMMISSION

In accordance with S.C. Code Ann. § 58-27-140(1), the Commission may, upon petition, "ascertain and fix just and reasonable standards, classifications, regulations, practices or service to be furnished, imposed, observed, and followed by any or all electrical utilities." Further, S.C. Code Ann. § 58-27-865(B) states, in pertinent part, that "[u]pon conducting public hearings in accordance with law, the commission shall direct each company to place in effect in its base rate an amount designed to recover, during the succeeding twelve months, the fuel costs determined by the commission to be appropriate for that period, adjusted for the over-recovery or under-recovery from the preceding twelve-month period."

Consistent with the requirements of S.C. Code Ann. § 58-27-865(B), the Commission convened an evidentiary hearing to determine the reasonableness of the Company's proposed rates to recover fuel costs.

[1] Order Nos. 2021-86-H and 2021-84-H.

III. DISCUSSION OF THE HEARING

The public evidentiary hearing was held virtually on September 13th and 14th of 2021 before the Commission with the Honorable Justin T. Williams presiding. Representing the Parties and appearing before the Commission in this Docket were Samuel J. Wellborn, Esquire, and Katie M. Brown, Esquire, for the Company; Kate Lee Mixson and Emma C. Clancy for SACE/CCL; Scott Elliott, Esquire, for SCEUC; and Christopher M. Huber, Esquire, and Andrew M. Bateman, Esquire, for ORS. The Company, SACE/CCL, and ORS pre-filed and presented witness testimony. No other party filed testimony.

A. Company Direct and Supplemental Direct Testimony

The Company presented the direct testimonies of Bryan L. Sykes, Steven D. Capps, Brett Phipps, Bryan P. Walsh, Kenneth D. Church, Jason D. Martin, and the supplemental direct testimony of Bryan L. Sykes and Brett Phipps. The pre-filed direct and supplemental direct testimony of all Company witnesses offered into the record was accepted into the record without objection. The exhibits to the Company's pre-filed direct and supplemental testimony that were offered into the record were accepted without objection, marked as Hearing Exhibits 1 through 7, and entered into the record.[2]

Company witness Church testified regarding the Company's nuclear fuel purchasing practices, provided costs for the period of June 1, 2020 through May 31, 2021 ("Review Period"),

[2] Hearing Exhibit 1 consists of the two exhibits DEC witness Church provided with his pre-filed direct testimony; Hearing Exhibit 2 consists of two exhibits DEC witness Capps provided with his pre-filed direct testimony labeled Capps Exhibit 1 and 2; Hearing Exhibit 3 consists of the confidential and public versions of Exhibit 3 to Capps' pre-filed direct testimony; Hearing Exhibit 4 consists of the two exhibits DEC witness Phipps provided with his pre-filed direct testimony labeled Phipps Exhibit 1 and 2; Hearing Exhibit 5 consists of the one exhibit to DEC witness Martin's pre-filed direct testimony labeled Martin Exhibit 1; Hearing Exhibit 6 consists of the 13 exhibits DEC witness Sykes provided with his pre-filed direct testimony labeled Sykes Exhibit 1 through 13; and Hearing Exhibit 7 consists of amended exhibits DEC witness Sykes provided with his pre-filed supplemental direct testimony labeled Sykes Amended Exhibit 1, 2, 3, 4, 5, 6, 7, and 12.

and described changes forthcoming for the period October 1, 2021 through September 30, 2022 ("Billing Period"). Tr. pp. 18.1-18.9

Company witness Phipps testified regarding the Company's fossil fuel purchasing practices, provided fossil fuel costs for the Review Period versus the prior review period of June 1, 2019 through May 31, 2020, and described changes forthcoming in the Billing Period relating to trends in market conditions and projected fossil fuel consumption and costs. Tr. pp. 47.1-47.11.

In his supplemental direct testimony, which was filed with the Commission on August 18, 2021, Company witness Phipps provided updates regarding projected coal and natural gas burns and costs for the billing period based on July 2021 fuels forecast and the trends in coal and natural gas market conditions in support of the updated fuel costs DEC expects in the estimated and forecasted periods for the period June 1, 2021 through September 30, 2022. The Company's direct testimony filed on July 30, 2021, was based on an April 2021 fuels forecast. Tr. pp. 49.1-49.4

Company witness Walsh testified regarding the Company's fossil/hydro/solar generation portfolio and changes made since the 2020 fuel cost recovery proceeding, changes expected in the near term, and the performance of the Company's fossil/hydro/solar generation facilities during the Review Period. Tr. pp. 78.1-78.12. Witness Walsh also provided information on significant fossil/hydro/solar outages that occurred during the Review Period and provided information concerning environmental compliance efforts. *Id.*

Company witness Capps testified regarding the performance of the Company's nuclear fleet during the Review Period.[3] Tr. pp. 34.1-34.12. Witness Capps reported to the Commission

[3] Pursuant to the Company's request, Commission Order No. 2021-587 directed that Exhibit 3 of Company witness Capps' testimony be treated as confidential. The confidential and public versions of Capps' Exhibit 3 were entered into evidence as Hearing Exhibit 3.

that the Company achieved a net nuclear capacity factor, excluding reasonable outage time, of 101.73% for the Review Period, which exceeds the 92.5% set forth in S.C. Code Ann. § 58-27-865. Tr. p. 34.6, lines 7-9.

Company witness Martin testified regarding DERP costs that are incorporated into the proposed fuel factors prepared by Company witness Sykes. Tr. pp. 88.1-88.14. Company witness Martin also provided information on the nature of the costs filed as well as any changes made to the DERP portfolio since the previous fuel proceeding. *Id.* Additionally, Company witness Martin sponsored the Company's revisions to the 2021 Renewable Net Metering Rider RNM (SC) tariff sheet, filed as Martin Exhibit 1. Tr. p. 88.9, lines 13-14. Martin Table 5 detailed the value of Net Energy Metering ("NEM") Distributed Energy Resource by component:

Components of NEM Distributed Energy Resource Value	**Component value ($/kWh) Residential PV[4]**	**Component value ($/kWh) SGS PV[5]**	**Component value ($/kWh) Large PV[5]**
Marginal Energy Cost	$0.02876	$0.02879	$0.02879
Marginal Capacity Cost	$0.00000	$0.00000	$0.00000
Ancillary Services	($0.00050)	($0.00049)	($0.00007)
T&D Capacity	$0.000000	$0.000000	$0.000000
Avoided Criteria Pollutants[5]	$0.00004	$0.00004	$0.00004
Avoided CO2 Emissions Cost (currently zero)	$0.000000	$0.000000	$0.000000
Fuel Hedge[6]	$0.000000	$0.000000	$0.000000
Utility Integration & Interconnection Costs	$0.000000	$0.000000	$0.000000
Utility Administration Cost	$0.000000	$0.000000	$0.000000
Environmental Costs	$0.000000	$0.000000	$0.000000
Subtotal	**$0.02830**	**$0.02834**	**$0.02876**
Line Losses[7]	$0.00061	$0.00061	$0.00061
Total Value NEM Distributed Energy Resource	**$0.02891**	**$0.02895**	**$0.02937**

Company witness Sykes' direct testimony addressed the Company's actual fuel, capacity-related costs, including Public Utility Regulatory Policies Act of 1978 ("PURPA") capacity, environmental, and DERP cost data for the Review Period; the projected fuel, capacity-related costs, environmental, and DERP cost information for June 1, 2021 through September 30, 2021 (the "Estimated Period"); and the Company's proposed fuel factors by customer class for the Billing Period. Tr. pp. 103.1-103.17. Company witness Sykes testified that the environmental

[4] "Residential PV" refers to a load shape reflecting generation installed by a residential customer. "SGS PV" refers to a load shape reflecting generation installed by a small commercial/industrial customer served under Small General Service Schedule SGS. "Large PV" refers to a load shape reflecting generation installed by a customer with higher consumption requirements and applies to all other nonresidential schedules. The Company has separated the values for residential customers ("Residential PV") and small commercial/industrial customers ("SGS PV") as a result of available actual metered solar load profile data for the residential class. The Company continues to utilize third-party solar load profile data for non-residential customers.

[5] Avoided Criteria Pollutants reflects NOx and SOx that have been separately identified from approved marginal energy costs.

[6] Pursuant to the Settlement Agreement reached in DEP's 2016 annual fuel proceeding (Docket No. 2016-3-E), the Company has calculated the hedge value and determined that no fuel hedge exists; therefore, the value indicated is zero.

[7] Line loss factors are 2.332% for on-peak marginal energy, 4.433% for off-peak marginal energy and 1.874% for marginal capacity per DEC's updated 2020-line loss analysis based upon 2020 cost of service.

cost component allocations were consistent with Order No. 2007-674 and that the capacity component was allocated in accordance with Order No. 2014-787. *Id.*

Company witness Sykes provided thirteen (13) exhibits to support his direct testimony. Company witness Sykes discussed the Company's approved DERP, associated costs and the DERP NEM Incentive. Tr. pp. 103.9-103.15. Witness Sykes testified that the Company seeks approval for the monthly DERP incremental costs amounting to a per-account monthly charge ("DERP Charge") of $0.66, $2.64, and $100.00 for South Carolina residential, commercial, and industrial customers, respectively, including Gross Receipts Tax. Tr. pp. 103.6, lines 1-3.

Company witness Sykes testified in his direct testimony that the anticipated impact of all components of the Company's filing for the average general service, lighting, and industrial customer is an increase of 1.37%, 0.70%, and 2.25%, respectively.

Company witness Sykes' supplemental direct testimony filed August 18, 2021, provided an update on expected changes in fuel commodity costs that will affect customers' fuel rates and amended the fuel rates included with his July 30, 2021 direct testimony. Tr. p. 107.2, lines 8-10. Witness Sykes testified the Company had available updated forecasts of fuel costs that were not available in time to be used in the Company's July 30, 2021 direct testimony. Tr. p. 107.2, lines 13-14. Witness Sykes had assessed the impacts of the increasing fuel commodity prices and determined that a significant under-recovery of fuel costs would likely exist through the end of the billing period if not addressed in this proceeding. Tr. p. 107.2, lines 14-17. The increasing commodity prices did not impact DERP avoided costs or DERP incremental costs. Tr. p. 107.2, lines 20-21. The Company proposed to update fuel rates now because of the likely significant under-recovery of fuel costs that would accrue if rates were not updated. Tr. p. 107.3, lines 1-3. Sykes testified that "[a]lthough this situation is atypical, it is not unprecedented, and the Company has, in the past, proposed rates based on an updated fuel forecast, as changes were necessary to align rates to recover anticipated costs."[8] Tr. p. 107.3, lines 11-13.

Witness Sykes testified other changes in the Company's supplemental filing consisted of removing certain inadvertently included charges in the variable environmental component of the fuel clause related to items that were identified during the review of the prior year fuel proceeding. Tr. p. 107.4, lines 11-13. The rates and monthly charges proposed by the Company in this proceeding are reflected on Sykes Amended Exhibit No. 1, summarized in-part as follows:

Customer Class	Base Fuel Cost Component (¢/kWh)	Environmental Cost Component (¢/kWh)	Capacity Related Cost Component (¢/kWh)	DERP Avoided Cost Component (¢/kWh)	Total Fuel Factor (¢/kWh)
Residential	1.8123	0.0180	0.1264	0.0040	1.9607
General Service/Lighting	1.8123	0.0136	0.0967	0.0029	1.9255
Industrial	1.8123	0.0085	0.0653	0.0020	1.8881

Company Sykes provided updated exhibits with his supplemental direct testimony. Tr. p. 107.2, lines 18-20. Witness Sykes testified in his supplemental direct testimony that the anticipated impact of all components of the Company's supplemental filing for the average general service, lighting, and industrial customer is an increase of 3.4%, 1.7%, and 5.5%, respectively. Tr. p. 107.5, lines 6-8.

B. SACE/CCL Direct and Surrebuttal Testimony

SACE/CCL presented the direct and surrebuttal testimony of Devi Glick. The pre-filed testimony of witness Glick offered into the record was accepted into the record without objection.[9]

[8] *See* Order No. 2013-696 in Docket No. 2013-3-E.
[9] SACE/CCL pre-filed public and confidential versions of witness Glick's direct testimony.

The one exhibit to witness Glick's pre-filed direct testimony labeled DG-1 offered into the record was accepted without objection, marked as Hearing Exhibit 9, and entered into the record.

SACE/CCL proffered witness Glick as an expert in the fields of unit commitment practices, plant economics, and utility resource planning. Tr. p. 131, lines 8-13. The Company objected to witness Glick being qualified as an expert in unit commitment and plant economics. Tr. pp. 133-34. The Chairman overruled the objection and qualified witness Glick in the areas proffered. Tr. p. 136, lines 7-13.

Witness Glick's direct testimony addresses the analysis and decision-making the Company uses to commit and dispatch its coal-fired power plants at Allen, Marshal, Cliffside, and Belews Creek. Tr. p. 147.5, lines 16-19. In particular, she evaluated the fuel costs included in the subset of production costs the Company used to make its unit commitment decisions in the review period of June 1, 2020 through May 31, 2021 and compared those to the fuel costs included in the average or full cost of production, which represent the fuel costs that the Company seeks to recover from ratepayers in this docket. Tr. p. 147.5, line 19-p. 147.6, line 1. She asserted the significant discrepancy between the marginal and average cost of production is driving the Company's uneconomic commitment of its coal plants and asserted the Company underrepresented its actual or average unit costs. Tr. p. 147.6, lines 1-5. She also made recommendations she asserted were needed to improve "the transparency and functioning of the Company's unit-commitment process to better serve ratepayers." Tr. p. 147.6, lines 5-7.

Witness Glick's direct testimony included six primary findings. Tr. pp. 147.8-147.10. Based on those findings, witness Glick offered the following recommendations:

1. That the Commission disallow $3.8 million in excess fuel costs incurred at Allen, Marshall, Cliffside and Belews Creek as a result of imprudent commitment decisions. This represents the fuel costs incurred in excess of what the Company would have paid for fuel had it instead committed its lower-cost units that were available at the time.
2. DEC should be required to make its marginal and average production costs fully transparent to the Commission and parties. Specifically, DEC should provide a full breakdown of the following, accompanied by a detailed explanation of each and full work papers that show how each component was calculated:
    a. Full production cost of each unit that will be passed on to ratepayers in this docket, broken down into fixed and variable costs. Variable costs should further be broken down by fuel, reagents/by products, emissions, and variable operations and maintenance.
    b. Marginal production cost of each unit used for making unit-commitment and dispatch decisions, broken down by the same components listed directly above. For any production costs excluded from DEC marginal production costs, the Company should provide a detailed justification for why these costs are not relevant for making unit-commitment decisions.
3. The Commission should require DEC to provide a detailed report describing its daily unit-commitment decisions and practices as part of future fuel clause adjustment proceedings. DEC should provide the following information as part of each fuel clause adjustment application, to inform the Commission's review of its unit-commitment practices and determination whether DEC's fuel and fuel-related costs for those units were reasonably and prudently incurred:
    a. All 7-day forecast sheets that show the cost data for every unit on the system that the Company used to develop the Company's daily unit-commitment decisions.
    b. The reason for any deviation between the commitment decision suggested by the Company's forward-looking price-based analysis and the Company's actual commitment decision (e.g., where the Company's analysis suggests that a unit has a production cost above the marginal system cost during a given day, and the Company self-commits the unit anyway).
    c. Hourly data sufficient for the Commission and intervening parties to calculate the actual costs incurred to operate each unit in each review period, including total unit generation, delivered fuel cost, marginal or "replacement" fuel cost, total variable O&M cost, system lambdas, day-ahead commitment status, and actual outages.
4. Given the low-capacity factor at which DEC's coal fleet operated during the review period, the Company should evaluate moving some of its plants to seasonal operation and retiring some of its units.

Tr. pp. 147.11-147.12. Witness Glick also recommended the Commission direct the Company to conduct a new retirement study of each unit in the Company's fleet. Tr. pp. 147.39, lines 10-11.

In her surrebuttal testimony, witness Glick disagreed with witness Swez's arguments in his rebuttal, including his argument that her testimony and analysis omitted, did not consider, or erroneously assumed certain inputs and assumptions. Tr. p. 4. Witness Glick also asserted the Company did not provide contemporaneous cost data that it evaluates at the time it makes its daily unit commitment decisions but that the system lambda is more than sufficient to identify systemic patterns of excess costs. Tr. p. 154.6. She additionally testified that she was not recommending the Company turn on and off its coal plants daily and therefore incur high startup and shutdown costs but rather her recommendations and analysis focus on the Company's uneconomic operations of its coal plants over sustained periods of time. Tr. p. 154.8.

Witness Glick testified she considered operating reserves but disagreed with the Company that the units at issue must be kept online to meet reserve requirements and there are less costly resources on which the Company can rely to ensure adequate operating reserves. Tr. p. 154.8. She further testified "[s]pecifically, DEC has or could have at its disposal more nimble resources, such as gas resources, battery storage, and paired renewables, which would provide operating reserves and increased grid flexibility at a lower total cost than the Company's existing coal units." Tr. p. 154.8. She also disagreed with witness Swez's criticisms of her use of actual fuel cost in her analysis and her comparison of the cost of coal at DEC's coal units to the cost of coal at other units around the country.[10] Tr. pp. 154.9-154.10.

C. ORS Direct Testimony

ORS presented the direct testimonies of Anthony D. Briseno, O'Neil O. Morgan, and Brandon S. Bickley and the revised direct testimony of Anthony M. Sandonato. The pre-filed

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[10] Hearing Exhibit 10 labeled Glick Cross-Examination Exhibit No. 1 was admitted during the Company's cross-examination of witness Glick.

direct testimonies of ORS witnesses Briseno, Morgan, and Bickley and the revised direct testimony of ORS witness Sandonato were accepted into the record without objection and ORS witnesses' exhibits were marked as Hearing Exhibits 11 through 14 and were entered into the record of the case.[11]

ORS witness Briseno presented direct testimony and ten (10) exhibits, which demonstrated the results of ORS's examination of the Company's books and records pertaining to operations under the Fuel Adjustment Clause for the Review Period. Tr. p. 254.2. Witness Briseno testified that based on ORS's examination, ORS agrees with the balances and the adjustments as put forth by the Company as of the end of the Review Period. Tr. p. 254.17. ORS agrees with the following cumulative (over)/under-recovery balances as calculated by the Company:

- May 2021 base fuel costs over-recovery balance of $1,958,880;
- May 2021 environmental costs component over-recovery balance of $1,690,482;
- May 2021 capacity costs under-recovery balance of $3,819,894;
- May 2021 DERP incremental costs over-recovery balance of $1,762,547;
- May 2021 DERP avoided costs over-recovery balance of $249,500;
- September 2021 base fuel cost under-recovery balance of $22,454,755;
- September 2021 environmental costs over-recovery balance of $1,386,744;
- September 2021 capacity costs under-recovery balance of $3,177,242;
- September 2021 DERP incremental costs over-recovery balance of $1,031,622; and

[11] Hearing Exhibit 11 consists of the nine exhibits ORS witness Briseno provided with his pre-filed direct testimony labeled ADB-1 through ADB-9; Hearing Exhibit 12 consists of the one exhibit ORS witness Morgan provided with his pre-filed direct testimony labeled OOM-1; Hearing Exhibit 13 consists of the six exhibits ORS witness Bickley provided with his pre-filed direct testimony labeled BSB-1 through BSB-6; and Hearing Exhibit 14 consists of five exhibits ORS witness Sandonato's provided with his pre-filed direct testimony labeled AMS-1 through AMS-5.

- September 2021 DERP avoided costs over-recovery balance of $178,909.[12]

ORS witness Morgan presented direct testimony and one (1) exhibit. Witness Morgan testified regarding ORS's recommendations resulting from the examination of the Company's DERP expenses for June 2020 through September 2022. Tr. p. 260.2. Specifically, witness Morgan testified regarding the Company's DERP avoided and incremental costs, the method by which the Company proposed to recover those costs, the Company's calculation of the NEM incentive, and the Company's modification to the Renewable Net Metering Rider. Tr. pp. 260.1-260.6. ORS found the Company's DERP avoided and incremental costs to be reasonably and prudently incurred in implementing the Company's DERP and the Company's estimated and forecasted DERP avoided and incremental costs to be reasonable. Tr. pp. 260.1-260.6. ORS found the Company's calculation of the proposed DERP Charge and of the under-collected incremental costs complied with Act 236 and the Commission's orders in previous DERP-related proceedings. Tr. pp. 260.1-260.6. Exhibit OOM-1 reflects incremental costs were over-recovered for the actual and estimated period and under-recovered for the forecasted periods.

ORS witness Bickley presented direct testimony and six (6) exhibits. Witness Bickley testified regarding ORS's examination of the Company's power plant operations, nuclear, fossil, and hydro generation performance, generation mix, plant dispatch, and forecasted power plant operations. Tr. pp. 271.1-271.7. Witness Bickley testified the Company utilizes economic dispatch which generally requires the lower cost units to be dispatched first. Tr. pp. 271.6. He also testified ORS reviewed the Company's dispatch and commitment process and identified no issues with regard to the dispatch and commitment of units that led to increased fuel costs. Tr. pp.

[12] This figure was calculated by ORS and the Company agreed with it in witness Sykes' rebuttal testimony.

281-282. When asked whether he concurred with witness Glick's recommended disallowance of $3.8 million in excess fuel costs, witness Bickley responded that he did not based on his review. Tr. pp. 284-85.

ORS witness Sandonato presented revised direct testimony and five (5) exhibits. Witness Sandonato testified regarding the Company's fuel expenses and ORS's examination relating to the Company's fuel expenses, fossil and nuclear fuel procurement, fuel transportation, environmental compliance-related costs, purchased power and the Company's policies and procedures. Tr. pp. 292.1-292.9. Witness Sandonato also testified regarding ORS's review of the Company's forecasted fuel-related costs and sales. Tr. pp. 292.1-292.9. Witness Sandonato testified that should the Commission approve the rates proposed in this proceeding, the average monthly bill for a residential customer on Rate RS using 1,000 kWh would increase by approximately $3.53, or 3.0 percent.

Witness Sandonato provided additional recommendations on behalf of ORS regarding the Company's annual fuel filings. He recommended DEC provide a forecast to all interested parties of the expected fuel factor to be set at its next annual fuel proceeding based upon its historical (over)/under recovery to date and forecasts of prices for uranium, natural gas, coal, oil, and other fuel required for the generation of electricity. Tr. p. 292.8. Additionally, the forecast would provide the expected DERP Charge to be set at the Company's next annual fuel proceeding based upon DEC's historical (over)/under-recovery to date and DEC's forecast of DERP incremental and avoided costs. Tr. p. 292.8. ORS recommended these forecasts be provided during the 4th quarter of the calendar year prior to the next annual fuel proceeding and in the 2nd quarter of the calendar year of the Company's next annual fuel proceeding, as these forecasts would provide valuable information for interested parties prior to the next fuel proceeding. Tr. pp. 292.8-292.9.

ORS also recommended the Company continue to actively monitor commodity and transportation costs outside of the quarterly filings. Tr. p. 292.9. If a large increase or decrease is experienced in the period between the Company's most recent quarterly forecast and the filing of the Company's direct testimony in an annual fuel proceeding, then the Company should update its forecasts to include pricing that is most current and accurate in the filing of the Company's direct testimony. Tr. p. 292.9.

D. Company Rebuttal Testimony

The Company presented the rebuttal testimonies of Bryan L. Sykes and John Swez.[13] The pre-filed rebuttal testimonies of witnesses Sykes and Swez offered into the record were accepted into the record without objection. The one exhibit to witness Sykes' pre-filed rebuttal testimony labeled Sykes Rebuttal Exhibit 12 offered into the record was accepted without objection, marked as Hearing Exhibit 8, and entered into the record.

Witness Sykes's rebuttal testimony was regarding ORS witness Briseno direct testimony that the estimated cumulative DERP avoided costs over-recovery balance through September 2021 contained a formula error resulting in the over-recovery balance through September 2021 being understated by $2,325. Tr. p. 109.2, lines 9-13. Witness Sykes agreed with witness Briseno the correct over-recovery balance for DERP avoided costs should be $178,909. Tr. p. 109.2, lines 17-22. Witness Sykes testified this correction does not change the DERP avoided cost component of the overall fuel factor because the correction results in a small dollar impact in the estimated cumulative over recovery balance. Tr. p. 109.3, lines 3-5. Witness Sykes filed a Rebuttal Exhibit 12 to incorporate the proposed adjustment. Tr. p. 109.3, lines 8-9.

[13] The Company pre-filed public and confidential versions of DEC witness Swez's rebuttal testimony.

Witness Swez was qualified as an expert in generation commitment and dispatch, without objection. Tr. pp. 324-325. The purpose of his rebuttal testimony was to respond to the testimony of SACE/CCL witness Glick. Tr. p. 331.3.

Witness Swez testified that fundamentally the analysis presented by witness Glick was inaccurate for many reasons ad contained many improper assumptions and calculations that have no connection to actual utility operations. Tr. p. 331.3, lines 14-17. Witness Swez asserted the "most concerning aspects of her analysis" were:

1. Witness Glick's analysis fails to recognize the fact that DEC unit commitment seeks to minimize production costs to serve a given amount of customer demand within reliability constraints;
2. Witness Glick's analysis unreasonably assumes that the Company has an unlimited amount of generation available at the lambda price;
3. Witness Glick improperly equates the lambda data to the total compensation of a generating unit, which is more like the analysis that one would make for generators in a Regional Transmission Organization ("RTO") rather than the more appropriate calculations for entities outside of an RTO like DEC;
4. Witness Glick's analysis fails to recognize additional physical costs of a generator that are required in order to produce energy, such as startup and no-load costs;
5. Witness Glick's analysis fails to recognize the need to run units for reliability, operating reserves, or unit testing;
6. Witness Glick's analysis selectively and improperly uses averaged data over a longer period, such as a month, in order to draw certain conclusions; and
7. Witness Glick's analysis incorrectly implies that fixed costs should be included in unit commitment and dispatch decisions, which would potentially result in uneconomic commitment and dispatch outcomes.

Tr. pp. 331.3-331.4.

Witness Swez disagreed that the Company's practices were imprudent in any way and testified the Company commits its generating units on an economic basis after consideration of specific operation constraints. Witness Swez testified further that "the decommitment of generating units in the manner suggested by SACE/CCL would have been imprudent and would have caused detrimental effects to the reliability of the bulk electric system." Tr. p. 331.4. Witness

Swez testified "with certainty" that decommitment of the coal generating units as suggested by witness Glick for the hours identified in her analysis "would have caused the Company to operate without adequate day-ahead planning reserves, forced the Company to rely on non-firm energy purchases at times to maintain customer reliability, required the Company to purchase more expensive energy than the generators that would have been de-committed, and likely ultimately resorted to curtailing customer load multiple times throughout this period." Tr. pp. 331.14-331.15. In addition, witness Swez testified the basis of witness Glick's testimony was a "theoretical backward-looking analysis" whereas the Company "cannot predict with 100% certainty the exact customer demand or unit availabilities ahead of time." Tr. p. 331.15. In addition, witness Swez testified "witness Glick's comparison of the DEC coal units to all the coal units in the country is oversimplified and fails to consider many aspects that would be necessary to make an accurate comparison." Tr. p. 331.8. For example, the units on Glick's list with the lowest coal costs are all located in or near the coal producing regions such as in the state of Wyoming. Tr. p. 331.18. Because these units have low transportation costs and utilize lower cost Powder River Basin coal, they would have a cheaper delivered fuel cost. Tr. 331.18.

Witness Swez disagreed with the additional reporting requirements recommended by witness Glick. Tr. p. 331.18-331.20. He testified the Company's application in this proceeding conforms to all applicable legal requirements and is substantially identical to that of all recent fuel rider applications. Tr. p. 331.21. In addition, the Company responded to extensive discovery requests from the parties. Tr. p. 331.21.

Finally, Witness Swez testified that the North Carolina Utilities Commission ("NCUC") declined to adopt the recommendations of witness Glick in the 2020 DEC and DEP fuel proceeding and, most recently, in the 2021 DEC fuel proceeding. Specifically, witness Swez testified that in the 2021 DEC fuel order, "the NCUC confirmed 'that the sufficiency of the Company's fuel application should be evaluated based on the requirements of applicable law.' The NCUC further noted 'the scope and level of detail contained in the Company's application, testimony, exhibits, and workpapers as filed in [the North Carolina] proceeding conforms with applicable law and is consistent with prior applications that have been deemed sufficient.'" Tr. p. 331.21 (quoting Order Approving Fuel Charge Adjustment, p. 14, Docket No. E-7, Sub 1250 (June 17, 2021)).

Regarding witness Glick's recommendation that a new retirement study be conducted, Witness Swez testified the recommendation was outside the scope of this fuel proceeding and that as recently as June 28, 2021, in Order No. 2021-447, the Commission already had directed Duke to perform a comprehensive coal retirement study to inform development of their 2022 Integrated Resource Plans.[14] Tr. p. 331.22.

IV. FINDINGS OF FACT AND CONCLUSIONS OF LAW

Having heard the testimony of the witnesses and representations of counsel and after careful review of the proposed orders and record, the Commission finds that approval of the rates and monthly charges proposed by the Company in this proceeding are consistent with the standards for fuel review proceedings conducted pursuant to S.C. Code Ann. § 58-27-865, and are supported by the substantial evidence in the record. The rates and monthly charges proposed by the Company are calculated to allow recovery in a precise and prompt manner while assuring public confidence and minimizing abrupt changes in charges to customers. As such, approval of these rates and monthly charges is in the public interest in this case. The Commission further finds the Company's

[14] Hearing Exhibit 15 was admitted during the Company's redirect examination of witness Swez.

proposed rates and monthly charges provide stabilization to the fuel factors, minimize fluctuations for the near future, and do not appear to inhibit economic development in South Carolina.

The Commission has carefully considered the proposed adjustment and other recommendations set forth by SACE/CCL witness Glick. The Commission declines to adopt them and finds the Company utilized economic dispatch appropriately and dispatched and committed units in a manner that complied with the requirements of S.C. Code Ann. § 58-27-865.[15]

The Commission finds the additional recommendations set forth by ORS witness Sandonato in his direct testimony to be appropriate and reasonable and adopts them.

The Commission finds that the methodology for determining the environmental cost component of the fuel factors and the methodology for allocation and recovery of the avoided capacity component used by the Company in this proceeding are consistent with the statutory requirements of S.C. Code Ann. § 58-27-865 and are just and reasonable.

The Commission finds that the fuel factors as calculated in Sykes Amended Exhibit No. 1 are lawful, just, and reasonable.

The Commission finds that the 2021 component values for the NEM Distributed Energy Resource, as shown in Table 5 in the testimony of Company witness Martin, comply with the NEM

[15] On September 23, 2021, DEC and SACE/CCL filed a joint letter with the Commission stating SACE/CCL had agreed to withdraw their $3.8 million disallowance recommendation in this docket and that DEC had agreed to provide the following information in its native format in future South Carolina annual fuel proceedings upon the submission of a data request from SACE/CCL:

- Excel spreadsheets showing the unit cost data that the Company sees at the time it makes its unit commitment decisions (projected unit costs). These spreadsheets include all Duke-operated resources available to serve load.
- Documents containing the Company's Seven Day Forecast reports that show how the Company planned to operate each unit (output for each unit).
- Total load projected to be served in each hour, expressed in MWs, and the required MWs of operating reserves required in each hour.

methodology approved by the Commission in Order No. 2015-194 and satisfy the requirements of S.C. Code Ann. §§ 58-40-10 *et seq.*

The Company's calculation and method of accounting for DERP avoided and incremental costs during the Review Period were reasonable and prudent, and were consistent with the methodology approved in Commission Order No. 2015-194, and complied with S.C. Code Ann. §§ 58-40-10 *et seq.*

The Commission finds that the revisions to the 2021 Renewable Net Metering Rider RNM tariff sheet reflected in Martin Exhibit 1 are lawful, just and reasonable.

The Commission finds that the DERP Charges as indicated in Sykes Amended Exhibit 1 at line 22 are reasonable and comply with S.C. Code Ann. §§ 58-27-865, 58-39-140 and 58-39-150.

IT IS THEREFORE ORDERED THAT:

1. The pre-filed testimonies of ORS witnesses Anthony D. Briseno, O'Neil O. Morgan, Brandon S. Bickley, and Anthony M. Sandonato; the pre-filed testimonies of Company witnesses Bryan L. Sykes, Steven D. Capps, Brett Phipps, Bryan P. Walsh, Kenneth D. Church, Jason D. Martin, and John Swez; the pre-filed testimonies of SACE/CCL witness Devi Glick along with their respective exhibits entered into evidence as Hearing Exhibits 1 through 9 and 11 through 14, are accepted into the record. The oral testimony of these witnesses provided at the hearing on September 13th and 14th of 2021 is also incorporated into the record of this case.

2. The fuel purchasing practices and policies, plant operations, and fuel inventory management of DEC related to the historical fuel costs and revenues for the Review Period, are consistent with the statutory requirements of S.C. Code Ann. § 58-27-865, and are just, reasonable, and prudent. However, with regard to plant outages that are not complete as of the end of the

Review Period, and plant outages where final reports or investigations (Company, contractor, government reports or otherwise) were not available at the time of the hearing on this matter, the reasonableness of such outages shall be subject to review in the period where such report(s) become available.

3. The methodologies used by the Company for determining the environmental cost component and the capacity-related cost component of the fuel factor are consistent with the requirements of S.C. Code Ann. § 58-27-865 and are reasonable and prudent for the review period and the billing period.

4. The methodologies used by the Company to calculate its avoided energy and capacity costs under PURPA for the Review Period and Billing Period are reasonable and prudent.

5. The Company's revisions to the 2021 Renewable Net Metering Rider RNM tariff sheet, attached hereto as **Order Exhibit 1**, are lawful, just and reasonable, and shall become effective for service rendered during the Billing Period.

6. The Company's calculation and method of accounting for avoided and incremental costs for NEM during the Review Period were reasonable and prudent, and were consistent with the methodology approved in Commission Order No. 2015-194, and complied with S.C. Code Ann. §§ 58-40-10 *et seq.*

7. The 2021 component values for NEM Distributed Energy Resource comply with the NEM methodology approved by the Commission in Order No. 2015-194 and satisfy the requirements of S.C. Code Ann. §§ 58-40-10 *et seq.*

8. The Company shall set its base fuel factor for all customer classes at 1.8123 cents per kWh, not including applicable environmental, capacity-related, and DERP avoided cost

components.[16] DEC's total fuel factors shall be set at 1.9607 cents per kWh for the Residential class, 1.9255 cents per kWh for General Service and Lighting Classes, and 1.8881 cents per kWh for the Industrial Class.

9. The Company shall set its environmental component billing factor at 0.0180 cents per kWh for the Residential class, 0.0136 cents per kWh for the General Service/Lighting class, and 0.0085 cents per kWh for the Industrial class for service rendered during the Billing Period.

10. The Company shall set its capacity-related component at 0.1264 cents per kWh for the Residential class, 0.0967 cents per kWh for the General Service/Lighting class, and 0.0653 cents per kWh for the Industrial class for service rendered during the Billing Period.

11. The Company shall set its DERP avoided cost component at 0.0040 cents per kWh for the Residential class, 0.0029 cents per kWh for the General Service/Lighting class, and 0.0020 cents per kWh for the Industrial class for service rendered during the Billing Period.

12. The Company shall set its DERP Charge at $0.66/month for the Residential class, $2.64/month for the Commercial class, and $100.00/month for the Industrial class, including Gross Receipts Tax and regulatory fees.

13. The Company shall file the South Carolina Retail Adjustment for Fuel, Variable Environmental, and Avoided Capacity Costs Rider and all other retail Tariffs with the Commission and a copy with ORS within ten (10) days of receipt of this Order.

14. The Company shall comply with the notice requirements set forth in S.C. Code Ann. § 58-27-865.

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[16] The base fuel factors, environmental component billing factor, avoided capacity component, and DERP avoided cost component do not include Gross Receipt Tax and regulatory fees.

15. The Company shall continue to utilize the methodology for developing the environmental component billing factor for each rate class to recover "variable environmental costs" under S.C. Code Ann. § 58-27-865(A)(1) approved in Order No. 2007-440. Pursuant to S.C. Code § 58-27-865(A)(1), the avoided capacity component of purchased power costs and other capacity costs that are permitted to be recovered through the fuel factor, are to be allocated and recovered from customers under a separate capacity component of the overall fuel factor based on the same method that is used by the utility to allocate and recover variable environmental costs.

16. The Company shall continue to file the monthly reports as previously required and record its natural gas utilizations on an hourly and daily basis as previously ordered.

17. The Company shall continue to examine and make adjustments as necessary to its natural gas hedging program in light of the potentially reduced volatility in the domestic natural gas market. The Company shall also provide monthly natural gas hedging reports to ORS.

18. The Company shall, by rate class, account monthly to the Commission and ORS for the differences between the recovery of fuel costs through base rates and the actual fuel costs experienced by booking the difference to unbilled revenues with a corresponding deferred debit or credit.

19. The Company shall submit monthly reports to the Commission and ORS of fuel costs and scheduled and unscheduled outages of generating units with a capacity of 100 megawatts or greater.

20. The Company shall provide a forecast to all interested parties of the expected fuel factor to be set at its next annual fuel proceeding based upon its historical (over)/under recovery to date and forecasts of prices for uranium, natural gas, coal, oil, and other fuel required for the generation of electricity. Additionally, the forecast will provide the expected DERP Charge to be

set at the Company's next annual fuel proceeding based upon the Company's historical (over)/under-recovery to date and the Company's forecast of DERP incremental and avoided costs. These forecasts shall be provided during the 4th quarter of the calendar year prior to the next annual fuel proceeding and in the 2nd quarter of the calendar year of the Company's next annual fuel proceeding. The Company shall continue to actively monitor commodity and transportation costs outside of the quarterly filings. If a large increase or decrease is experienced in the period between the Company's most recent quarterly forecast and the filing of the Company's direct testimony in an annual fuel proceeding, the Company is directed to update its forecasts to include pricing that is most current and accurate in the filing of the Company's direct testimony.

21. This Order shall remain in full force and effect until further Order of the Commission.

BY ORDER OF THE COMMISSION:

____
Justin T. Williams, Chairman

ATTEST:

____
Florence P. Belser, Vice-Chairman

(SEAL)

RIDER RNM (SC)
RENEWABLE NET METERING

AVAILABILITY

This Rider is closed to new participants on and after June 1, 2021. Customers requesting net energy metered (NEM) service on and after June 1, 2021 will receive service in accordance with the NEM tariff(s) in effect at that time.

Participants and subsequent owners of the customer-generator facility (collectively, "Participants") who applied for service under this Rider prior to May 16, 2019 shall remain eligible for standard service under this Rider until December 31, 2025. Participants who applied for service under this Rider on and after May 16, 2019 and prior to June 1, 2021 shall remain eligible for standard service under this Rider until May 31, 2029. Participants will be given the option to transfer to Schedule R-STOU (Residential Service, Solar Time-of-Use) and Rider RSC (Residential Solar Choice) beginning January 1, 2022. If Participants elect not to transfer to Schedule R-STOU and Rider RSC by the applicable sunset date of December 31, 2025 or May 31, 2029, they may continue to receive service under this Rider and their applicable rate schedule subject to the following provisions:

1. Any volumetric price increase after their applicable sunset date will be placed in a non-bypassable charge based on the estimated total solar energy production of their system size.
2. Participants will be assessed a monthly minimum bill set at $10 more than the Basic Facilities Charge at that time.
3. Monthly Excess Energy will be credited at the avoided cost rate in effect at that time, rather than carry forward to the next billing month.

Available to residential and nonresidential Customers receiving concurrent service from the Company, on a metered rate schedule, except as indicated under General Provisions. A customer-generator is an owner, operator, or lessee of an electric generation unit that generates or discharges electricity from a renewable energy resource, including an energy storage device configured to receive electrical charge solely from an onsite renewable energy resource. The renewable NEM generation, which includes a solar photovoltaic; solar thermal; wind powered; hydroelectric; geothermal; tidal or wave energy; recycling resource; hydrogen fueled or combined heat and power derived from renewable resources; or biomass fueled generation source of energy, is installed on the Customer's side of the delivery point, for the Customer's own use, interconnected with and operated in parallel with the Company's system. The generation must be located at a single premise owned, operated, leased or otherwise controlled by the Customer. The system may either be owned by the Customer or by a lessor and leased to the Customer.

GENERAL PROVISIONS

1. To qualify for service under this Rider, the Customer must comply with all applicable interconnection standards and must provide, in writing, the Nameplate Capacity of the Customer's installed renewable generation system. Any subsequent change to the Nameplate Capacity must be provided by the Customer to the Company in writing by no later than 60 days following the change.
2. To qualify for service under this Rider, a residential Customer may be served on an approved residential rate schedule, but may not be served under Rider NM. The Nameplate Capacity of Customer's installed generation system and equipment must not exceed 20 kW AC.
3. To qualify for service under this Rider, a nonresidential Customer may be served on an approved general service or industrial rate schedule, but may not be served on Schedules TS, BC, HP, PG, MP or Rider NM. The Nameplate Capacity of Customer's installed renewable generation system and equipment must not exceed the lesser of 1,000 kW AC or 100% of the Customer's contract demand which shall approximate the Customer's maximum expected demand.
4. If the Customer is not the owner of the premises receiving electric service from the Company, the Company shall have the right to require that the owner of the premises give satisfactory written approval of the Customer's request for service under this Rider.
5. All environmental attributes, including but not limited to "renewable energy certificates" (RECs), "renewable energy credits" or "green tags", associated with the generation system shall be conveyed to the Company until billing of a Distributed Energy Resource Program Rider DERP Charge is discontinued on all customer bills. The Customer certifies that the environmental attributes have not, and will not, be remarketed or otherwise resold

RIDER RNM (SC)
RENEWABLE NET METERING

for any purpose, including another distributed energy resource standard or voluntary purchase of renewable energy certificates in South Carolina or in any other state or country for the Contract Period and any successive contract periods thereto.

6. If the electricity supplied to the Customer by the Company exceeds the electricity delivered to the grid by the customer-generator during a monthly billing period, the customer-generator shall be billed for the net electricity in kilowatt hours (kWh) supplied by the Company plus any demand or other charges under the applicable rate schedule or riders. If the electricity delivered to the grid by the customer-generator exceeds the electricity in kWh supplied by the utility during a monthly billing period, the Customer-Generator shall be credited for the excess kWh generated during that billing period.
7. Electricity delivered to the grid by the Customer's renewable generation that exceeds the electricity delivered by the Company is defined as Excess Energy. When used in conjunction with a time of use schedule, the TOU periods shall be specified in the applicable schedule and any Excess Energy shall apply first with the Excess Energy generated On-Peak kWh offsetting On-peak usage and then offsetting Off-peak usage. Any excess Off-Peak kWh shall only apply against Off-peak kWh usage. Any Excess Energy not used in the current month to offset usage shall carry forward to the next billing month, except for Participants served under this Rider beyond the applicable sunset date of December 31, 2025 or May 31, 2029, for which Excess Energy will be credited at the end of each billing month.
8. Excess Energy shall be used to reduce electricity delivered and billed by the Company during the current or a future month, except that for the March billing period any carry-over shall be compensated as described in the RATE paragraph below.
9. In the event the Company determines that it is necessary to increase the capacity of facilities beyond those required to serve the Customer's electrical requirement or to install a dedicated transformer or other equipment to protect the safety and adequacy of electric service provided to other customers, the Customer shall pay the estimated cost of the required transformer or other equipment above the estimated cost which Company would otherwise have normally incurred to serve the Customer's electrical requirement, in advance of receiving service under this Rider.
10. The rates set forth herein are subject to Commission Order No. 2015-194, issued in Docket No. 2014-246-E pursuant to the terms of S.C. Code § 58-40-20(F)(4). Eligibility for this rate will terminate as set forth in that Order, and otherwise as specified above. The value of NEM generation eligible for this Rider shall be computed using the methodology contained in Commission Order No. 2015-194, in Docket No. 2014-246-E, and shall be updated annually by the Company. The value of NEM generation for 2021~~0~~ is $0.02891~~$0.02868~~ per kWh for Schedules RS, RE, ES, RB and RT; $0.02895~~$0.02871~~ per kWh for Schedule SGS; and $0.02937~~$0.02871~~ per kWh for all other schedules.

RATE

All provisions of the applicable schedule and other applicable riders will apply to service supplied under this Rider, except as modified herein. For any bill month during which the Energy Charges are a net credit, the respective Energy Charges for the month shall be zero. Credits shall not offset the Basic Facilities Charge or the Demand Charge (if applicable). In addition to all charges in the applicable rate schedule for the Customer's net electrical usage, the following credit may be applicable annually:

Credit for Excess Energy
If the Customer has Excess Energy after offsetting usage as of the date of the March billing, the Company shall pay the Customer for the amount of the accumulated Excess Energy times a rate of $0.0270 per kWh, after which the amount of Excess Energy shall be set to zero.

Participants served under this Rider beyond the applicable sunset date of December 31, 2025 or May 31, 2029 will receive credit for Excess Energy for each billing month. These Participants will also be assessed a monthly non-bypassable charge based on their Nameplate Capacity for any volumetric price increase thereafter.

Duke Energy Carolinas, LLC

Electricity No. 4
South Carolina ~~Eleventh~~Twelfth Revised Leaf No. 119
Superseding South Carolina ~~Tenth~~ Eleventh Revised Leaf No. 119

RIDER RNM (SC)
RENEWABLE NET METERING

MINIMUM BILL
The monthly minimum bill for customers receiving service under this Rider shall be no less than Basic Facilities Charge from the applicable rate schedule and riders plus, if applicable, any of the following Charges: the Demand Charge, the Economy Demand Charge, Excess Demand Charge and the Extra Facilities Charge.

Participants served under this Rider beyond the applicable sunset date of December 31, 2025 or May 31, 2029 will be assessed a monthly minimum bill set at $10 more than the Basic Facilities Charge at that time. The minimum bill will be satisfied by the Basic Facilities Charge, the portion of the Customer's monthly volumetric energy charges specific to customer and distribution costs, and riders.

Bill credits for net excess energy are not included in the calculation of the minimum bill charge. Bill credits will reduce a Customer's total bill after the minimum bill charge has been applied.

METERING REQUIREMENTS
The Company will furnish, install, own and maintain a billing meter to measure the kWh delivered by the Company to the Customer, and to measure the net kWh purchased by the Customer or delivered to the Company. For renewable generation capacity of 20 kW AC or less, the billing meter will be a single, bi-directional meter which records independently the net flow of electricity in each direction through the meter, unless the Customer's overall electrical requirement merits a different meter. For larger renewable generation capacities, the Company may elect to require two meters with 30-minute interval capabilities to separately record the Customer's electrical consumption and the total generator output, which will be electronically netted for billing. The Customer grants the Company the right to install, operate, and monitor special equipment to measure the Customer's generating system output, or any part thereof, and to obtain any other data necessary to determine the operating characteristics and effects of the installation. All metering shall be at a location that is readily accessible by the Company.

SAFETY, INTERCONNECTION AND INSPECTION REQUIREMENTS
This Rider is only applicable for installed renewable generation systems and equipment that complies with and meets all safety, performance, interconnection, and reliability standards established by the Commission, the National Electric Code, the National Electrical Safety Code, the Institute of Electrical and electronic Engineers, Underwriter's Laboratories, the Federal Energy Regulatory Commission and any local governing authorities. The Customer must comply with all liability insurance requirements of the Interconnection Standard.

POWER FACTOR
The Customer's renewable generation must be operated to maintain a 100% power factor, unless otherwise specified by Company. When the average monthly power factor of the power supplied by the Customer to the Company is other than 100%, the Company may correct the energy in kWh, as appropriate. The Company reserves the right to install facilities necessary for the measurement of power factor. The Company will not install such equipment, nor make a power factor correction if the renewable generation system is less than 20 kW and uses an inverter.

CONTRACT PERIOD
The Customer shall enter into a contract for service under this Rider for a minimum original term of one (1) year, and the contract shall automatically renew thereafter, except that either party may terminate the contract after one year by giving at least sixty (60) days prior notice of such termination in writing.

The Company reserves the right to terminate the Customer's contract under this Rider at any time upon written notice to the Customer in the event that the Customer violates any of the terms or conditions of this Rider, or operates the renewable generation system and equipment in a manner which is detrimental to the Company or any of its customers. In the event of early termination of a contract under this Rider, the Customer will be required to pay the Company for the costs due to such early termination, in accordance with the Company's South Carolina Service Regulations.